

JS 9/8/21
RJA 01/03/22

P-18-0020

Post-Focus Revision 2 01/29/2019

Engineer: Jackson

PV(kg/yr): 90000

Revision Notes/Assessment Overview: Submitter modified PV from 500,000 to 90,000. Telecom with submitter stated utilizing smaller batch sizes for the reduced PV of [REDACTED] kg/batch at manufacturing sites down from [REDACTED] kg/batch.

Submitter: Myriant Corporation

Use: [REDACTED]

Analog
FGEW = [REDACTED]

Other Uses: Analog [REDACTED]
[REDACTED]
[REDACTED]

MSDS: Y

Label: N

Gen Eqpt: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits. Wear splash resistant safety goggles. Wear appropriate work clothing. Wear appropriate chemical resistant gloves.

Respirator: A NIOSH approved air-purifying respirator with an appropriate cartridge or canister may be appropriate under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Health Effects: Not classified as hazardous.

TLV/PEL:

LVE PPE:

CRSS:

Chemical Name: Butanedioic acid, polymer with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol, 2,5-furandione and 1,3-propanediol, 3a,4,5,6,7,7a-hexahydro-4,7-methano-1H-inden-5(or 6)-yl ester

S-H2O: 1.9E-05

VP: 0.000001

MW: 535

Physical State and Misc CRSS Info:

NEAT: Liquid

Mfg: Liquid

Proc/FormL: Solution/Dispersion: 75% in coating formulation; Dispersion: 60% in composite formulation

End Use: Destroyed; Destroyed. MW NAVG = 535 with 35% < 500 and 57% < 1000, by GPC. Submitted Data: Colorless viscous liquid; WS = 0.284 g/L (MSDS); log P = 1.60 (MSDS); viscosity = 112,000 mPa/sec; density = 1.222 g/cm³. The WS is likely due to unreacted feedstocks. The log P value of 1.60 may also be due to unreacted feedstocks; no other information was made available about this value. Estimated Data (EPI for structure with 2 cyclopentadienes, one maleic anhydride, one propanediol and one succinic acid, MW = 538.64, MF = C₃₁ H₃₈ O₈, SMILES C1(OC(=O)CCC(=O)OCCOC(=O)C=CC(=O)OC5CC6C4C(C=CC4)C5C6)CC2C3C(C=CC3)C1C2, MP entered as 20°): BP = 557.12°C; VP = 9.55E-10 torr; WS = 1.93E-05 g/L; log P = 6.72. Cont'd on p.6.

Consumer Use: N

SAT (concerns): 10/24/2017

Related Cases and Misc SAT info:

Related Cases:

Migration to ground water: Negligible

PBT Rating: 3P 1B 1T

Health: 1,Dermal; Drinking Water; Inhalation

Eco: 1, No releases to water

Occupational Exposure Rating: [REDACTED]

Notes & Key Assumptions: Occupational exposure and environmental releases were estimated using the 9/30/2013 version of ChemSTEER tool. Input to ChemSTEER tool includes information from: the PMN submission, physical / chemical properties, relevant past cases, and technical contact. SAT concerns are for dermal, drinking water, and inhalation exposures; no releases to water. PV > 100,000 kg/yr, therefore a full assessment was performed. No same-submitter past cases were found. The following different-submitter, similar use past cases were referenced for consistency: [REDACTED]; [REDACTED] and [REDACTED].

[REDACTED]. // Manufacturing: Releases from equipment cleaning and process wastes specified by the submitter were assessed. Exposure during loading was assessed (consistent with [REDACTED]; remaining cases did not assess manufacturing). // Processing: Release from original container cleaning was assessed (consistent with [REDACTED] does not assess processing). Dermal exposures from unloading was assessed (consistent with [REDACTED] does not assess processing). // Use 1 (composite cable): Submission and technical contact indicate [REDACTED] of PV goes [REDACTED]. Release from container and equipment cleaning were assessed (consistent with [REDACTED]. Exposure from unloading was assessed (consistent with [REDACTED] // Use 2 [REDACTED]: The remaining [REDACTED] of the PV is intended for [REDACTED]. Release from container cleaning, equipment cleaning, and coating application were assessed (consistent with [REDACTED]). Dermal exposure from unloading and inhalation exposure from [REDACTED] were assessed (consistent with [REDACTED]).

Pollution prevention Considerations: None.

P2REC: None.

Exposure Based Review: [REDACTED]

- 1) # of workers exposed: [REDACTED] >1000 [REDACTED]
- 2) >100 workers with >10 mg/day inhalation exposure: [REDACTED]
- 3)(a) >100 workers with/1-10 mg/day inh. exp. & >100 days/yr: [REDACTED]
- 3)(b) Routing Dermal Cont: >250 workers & >100 days/yr: [REDACTED]

Scenario Details:

Name: [REDACTED]

Number of Sites: [REDACTED]

Locations:

REICHOLD INC , JACKSONVILLE , FL 32254-2891

DYSTAR LP , REIDSVILLE , NC 27320

Basis: Submission identifies [REDACTED] sites and technical contact indicates that dilution occurs at the manufacturing site for formulations of [REDACTED] PMN (RAD assumes 75% as conservative). Technical contact also provides that batch size is [REDACTED] kg/batch. CS calculates [REDACTED] batches/site-yr (consistent with submission estimate of exposure days).

Process Description:

[REDACTED]

ENVIRONMENTAL RELEASES ESTIMATE SUMMARY

Release Notes: IRER Note: The daily releases listed for any source below may coincide with daily releases from the other sources to the same medium.

Media: Water

Descriptor A: Output 2

Quantity A: [REDACTED] kg/site-day over

Frequency A: [REDACTED] day/yr from [REDACTED] sites or [REDACTED] kg/yr

To: On-site WWT (submission)

From: [REDACTED]

Basis: User-Defined Loss Rate Model. Submission indicates [REDACTED] kg/batch sent to On-site WWT at the Dystar site from [REDACTED]

[REDACTED]

Media: Incineration

Descriptor A: Output 2

Quantity A: [REDACTED] kg/site-day over

Frequency A: [REDACTED] day/yr from [REDACTED] sites or [REDACTED] kg/yr

To: Off-site Incineration (submission)

From: Process Releases

Basis: User-Defined Loss Rate Model. Submission estimates a total of [REDACTED] kg/batch for each site is released to Off-site Incineration from process waste, sampling, and packaging.

Release Total: [REDACTED] kg/yr - all sites

OCCUPATIONAL EXPOSURES ESTIMATE SUMMARY

Media: Dermal

Exposure To: [REDACTED]

Descriptor A: High End

Quantity A: [REDACTED] mg/day over

Frequency A: [REDACTED] days/yr

Basis: Loading Liquid Product into Drums EPA/OPPT 2-Hand Dermal Contact with [REDACTED] Model. Per November 2016 RAD guidance, default parameters for this model were updated: body weight (BW) was updated from 70 to 80 kg and Averaging Time over a Lifetime (ATc) was updated from 70 to 78 years.

Number of workers (all sites) with Dermal Exposure: [REDACTED]

INHALATION MONITORING DATA REVIEW

1)Uncertainty (estimate based on model,regulatory limit, or data not specific to industry.):
Yes

2)(a)Exposure level > 1mg/day?: No

2)(b)Hazard Rating for health of 2 or greater?: No

Inhalation monitoring data desired?: No

Name: [REDACTED]

Number of Sites: [REDACTED]

Locations:

unknown site(s)

Basis: Submission indicates PMN may be sent to a distributor for drumming and distribution. RAD assumes [REDACTED] distribution site, [REDACTED] days/yr as a standard assumption, and [REDACTED] PMN in formulation. CS calculates [REDACTED] kg PMN/site-day.

Process Description: [REDACTED]

ENVIRONMENTAL RELEASES ESTIMATE SUMMARY

Release Notes: IRER Note: The daily releases listed for any source below may coincide with daily releases from the other sources to the same medium.

Media: Water or Incineration or Landfill

Descriptor A: High End

Quantity A: [REDACTED] kg/site-day over

Frequency A: [REDACTED] day/yr from [REDACTED] sites or [REDACTED] kg/yr

To: uncertain

From: Cleaning Liquid Residuals from Drums Used to Transport the Raw Material

Basis: EPA/OPPT Drum Residual Model, CEB standard 3% residual. Submission does not estimate releases from repackaging. RAD assesses using a standard model to uncertain media.

Release Total: [REDACTED] kg/yr - all sites

OCCUPATIONAL EXPOSURES ESTIMATE SUMMARY

Media: Dermal

Exposure To: [REDACTED]

Descriptor A: High End

Quantity A: [REDACTED] mg/day over

Frequency A: [REDACTED] days/yr

Basis: [REDACTED]
[REDACTED] Per November 2016 RAD guidance, default parameters for this model were updated: body weight (BW) was updated from 70 to 80 kg and Averaging Time over a Lifetime (ATc) was updated from 70 to 78 years.

Number of workers (all sites) with Dermal Exposure: [REDACTED]

INHALATION MONITORING DATA REVIEW

1)Uncertainty (estimate based on model,regulatory limit, or data not specific to industry.):
Yes

2)(a)Exposure level > 1mg/day?: No

2)(b)Hazard Rating for health of 2 or greater?: No

Inhalation monitoring data desired?: No

Name: Use 1: [REDACTED]

Number of Sites: [REDACTED]

Locations:

FIBER LINE / COUSIN LLC , HICKORY , NC 28602-4045

Basis: Submission and technical contact indicate [REDACTED] of PV goes to one company for composite use. Submission identifies [REDACTED] use site. RAD assumes [REDACTED] days/yr as a standard assumption. PMN is received at use site at [REDACTED]. CS calculates use rate of [REDACTED] kg/site-day.

Process Description: [REDACTED]
[REDACTED]
[REDACTED]

ENVIRONMENTAL RELEASES ESTIMATE SUMMARY

Release Notes: IRER Note: The daily releases listed for any source below may coincide with daily releases from the other sources to the same medium.

Media: Water or Incineration or Landfill

Descriptor A: High End

Quantity A: [REDACTED] kg/site-day over

Frequency A: [REDACTED] day/yr from [REDACTED] sites or [REDACTED] kg/yr

To: uncertain

From: [REDACTED]

Basis: EPA/OPPT Drum Residual Model, CEB standard 3% residual. Submission does not estimate releases. RAD assesses using a standard model to uncertain media.

Media: Water or Incineration or Landfill

Descriptor A: Conservative

Quantity A: [REDACTED] kg/site-day over

Frequency A: [REDACTED] day/yr from [REDACTED] sites or [REDACTED] kg/yr

To: uncertain

From: [REDACTED]

Basis: EPA/OPPT Multiple Process Vessel Residual Model, CEB standard 2% residual. Submission does not estimate releases, but states that company only cleans out the extrusion die once per year. RAD assesses equipment cleaning 1/yr because site is identified. Media or release is uncertain.

Release Total: [REDACTED] kg/yr - all sites

OCCUPATIONAL EXPOSURES ESTIMATE SUMMARY

Media: Dermal

Exposure To: [REDACTED]

Descriptor A: High End

Quantity A: [REDACTED] mg/day over

Frequency A: [REDACTED] days/yr

Basis: Unloading Liquid Raw Material from Drums EPA/OPPT 2-Hand Dermal Contact with Liquids Model. Per November 2016 RAD guidance, default parameters for this model were updated: body weight (BW) was updated from 70 to 80 kg and Averaging Time over a Lifetime (ATc) was updated from 70 to 78 years.

Number of workers (all sites) with Dermal Exposure: [REDACTED]

INHALATION MONITORING DATA REVIEW

1)Uncertainty (estimate based on model,regulatory limit, or data not specific to industry.):
Yes

2)(a)Exposure level > 1mg/day?: No

2)(b)Hazard Rating for health of 2 or greater?: No

Inhalation monitoring data desired?: No

Name: Use 2: [REDACTED]

Number of Sites: [REDACTED]

Locations:

unknown site(s)

Basis: The remaining [REDACTED] % of the PV is used for [REDACTED]. Submission estimates [REDACTED] coating application sites (RAD assumes [REDACTED] sites due to concerns for both exposure and release estimates). RAD assumes [REDACTED] dyas/yr as standard assumption. PMN is [REDACTED] in coating formulation per the submission. CS calculates use rate of [REDACTED] kg PMN/site-day.

Process Description: [REDACTED]

ENVIRONMENTAL RELEASES ESTIMATE SUMMARY

Release Notes: IRER Note: The daily releases listed for any source below may coincide with daily releases from the other sources to the same medium.

Media: Water or Incineration or Landfill

Descriptor A: High End

Quantity A: [REDACTED] kg/site-day over

Frequency A: [REDACTED] day/yr from [REDACTED] sites or [REDACTED] kg/yr

To: Uncertain

From: Cleaning Liquid Residuals from Drums Used to Transport the Raw Material

Basis: EPA/OPPT Drum Residual Model, CEB standard 3% residual. Submission does not estimate releases. RAD assesses using a standard model to uncertain media.

Media: Water or Incineration or Landfill

Descriptor A: Conservative

Quantity A: [REDACTED] kg/site-day over

Frequency A: [REDACTED] day/yr from [REDACTED] sites or [REDACTED] kg/yr

To: Uncertain

From: Equipment Cleaning Losses of Liquids from Multiple Vessels

Basis: EPA/OPPT Multiple Process Vessel Residual Model, CEB standard 2% residual. Submission does not estimate releases. RAD assesses using a standard model to uncertain media.

Media: Water or Incineration or Landfill

Descriptor A: Output 1

Quantity A: [REDACTED] kg/site-day over

Frequency A: [REDACTED] day/yr from [REDACTED] sites or [REDACTED] kg/yr

Descriptor B: Output 2

Quantity B: [REDACTED] kg/site-day over

Frequency B: [REDACTED] day/yr from [REDACTED] sites or [REDACTED] kg/yr

To: water, incineration, or landfill (model)

From: Roll Coating

Basis: [REDACTED]

[REDACTED] The model assumes media of release is water, incineration, or landfill.

Release Total: [REDACTED] kg/yr - all sites

OCCUPATIONAL EXPOSURES ESTIMATE SUMMARY

Media: Dermal

Exposure To: [REDACTED]

Descriptor A: High End

Quantity A: [REDACTED] mg/day over

Frequency A: [REDACTED] days/yr

Basis: [REDACTED]

[REDACTED]. Per November 2016 RAD guidance, default parameters for this model were updated: body weight (BW) was updated from 70 to 80 kg and Averaging Time over a Lifetime (ATc) was updated from 70 to 78 years.

Number of workers (all sites) with Dermal Exposure: [REDACTED]

INHALATION MONITORING DATA REVIEW

1)Uncertainty (estimate based on model,regulatory limit, or data not specific to industry.):

Yes

2)(a)Exposure level > 1mg/day?: No

2)(b)Hazard Rating for health of 2 or greater?: No

Inhalation monitoring data desired?: No

Media: Inhalation

Exposure To: Particulate

Descriptor A: High End of Range

Quantity A: [REDACTED] mg/day over

Frequency A: [REDACTED] days/yr

Descriptor B: Low End of Range

Quantity B: [REDACTED] mg/day over

Frequency B: [REDACTED] days/yr

Basis: [REDACTED]

[REDACTED]. Per November 2016 RAD guidance, default parameters for this model were updated: body weight (BW) was

updated from 70 to 80 kg and Averaging Time over a Lifetime (ATc) was updated from 70 to 78 years. Low-end Cm = 0.04 mg/m³ over h= [REDACTED] hrs/day. High-end Cm = 0.26 mg/m³ over h = [REDACTED] hrs/day.

Number of workers (all sites) with Inhalation Exposure: [REDACTED]

INHALATION MONITORING DATA REVIEW

1)Uncertainty (estimate based on model,regulatory limit, or data not specific to industry.):

Yes

2)(a)Exposure level > 1mg/day?: No

2)(b)Hazard Rating for health of 2 or greater?: No

Inhalation monitoring data desired?: No